

Surviving turbulent times requires deep management changes

The Stone Age did not end due to a stone shortage. The Conventional Oil Age was not eclipsed by vanishing traditional oil and gas resources. The Shale Revolution unleashed an era of abundant, new unconventional oil and gas supplies. It caused pricing volatility and numerous other changes that are transforming the hydrocarbon industry. As with any major tectonic shift, the turbulence accompanying the shale revolution is irregular, erratic and nonlinear. Consequently, senior management must apply new business models to address the unprecedented market challenges within the energy and hydrocarbon processing industries.

Leadership through tough times. If a company has no clear end goals firmly in place, then no amount of time or resources will successfully achieve those targets. Unfortunately, many engineering and construction (E&C) contractors operate without firm direction. These companies are not developing the appropriate strategies and structures to meet the new market conditions initiated by the shale revolution.

Better leadership is needed within the E&C industry. For example, more than 50% of the major E&C contractors replaced their CEOs over the past three years. Yet, many E&C contractors are still losing money, seeking mergers or facing potential bankruptcy. The question baffling E&C management is: What actions are needed to reverse the damaging situation and ensure long-term survival and prosperity?

Due to turbulent and transformative times, E&C contractors are working under higher risk levels. The higher risks require that contractors earn greater remuneration levels for their efforts. However, present accounting figures do not correctly inform senior management of what remuneration and earnings are really needed. In some cases, the figures are overestimates of the company's true profitability. E&C industry accounting can be misleading; consequently, these financials lack quality information to support good decision-making.

Seed funds for E&C companies. In the agriculture industry, there is the concept of "seed corn," which is a portion of a harvest that is reserved for future planting. It is not part of the harvesting profit and is a cost to stay in business. Similarly, for E&C companies, part of what is supposedly profits are really costs (reserve funds) that are required to just "stay in business." Due to the present market turbulence, the need for higher levels of "seed funds" by E&C contractors is obvious and acute. Unfortunately, E&C contractors are not earning (saving) enough seed funds.

New management strategies for the E&C industry. Why have managements at global E&C companies not addressed the problem of insufficient reserves? The main reasons are perverse incentives. Management bonuses and stock options are based on the absolute size of company profits. Setting aside greater fund reserves to support higher risks would significantly lower the net income and, consequently, harm executive bonuses and stock options.

Available solutions. Company executives have four resources that can be used to increase productivity and raise real profits. These include:

1. Capital (money)
2. Physical assets (buildings, equipment)
3. Knowledge (intellectual capital)
4. Time.

To manage marketplace turmoil, senior executives of E&C companies are aggressively reallocating the listed resources. Such plans begin with a thorough understanding of where capital funds are tied up in each specific resource and effectively redistributing money to net maximum efficiency. Every E&C contractor allocates investment monies differently. Upstream E&C companies have most of their capital in floating rigs. Other E&C companies may have the bulk of their funds in physical buildings or proprietary technologies. Senior leadership must understand where the investment monies (capital) reside to best manage such resources and increase companywide productivity.

Trimming the "fat" is painful. The next question is: what investment capital is no longer productive? Within the organization, management must decipher what is no longer muscle and is only fat (waste of resources). Often, this means going on a corporate "diet" and reallocating capital to more productive areas. Under this era of great transformation, E&C contractors make changes not due to pride, internal politics, incapacity or arrogance. Unfortunately, the "fat" resources are no longer productive and cannot remain part of the organization.

E&C contractors must retire old products and services that once contributed to corporate performance but now are financial drags. This includes past acquisitions or JVs that no longer add value to company strategies or performance.

It is a matter of survival. Contractors are like ships travelling in the ocean for many months; they inevitably pick up

barnacles that slow their speed, efficiency and maneuverability. Just as ship operators remove the barnacles to improve performance, contractors must clean out the old and have a policy of systematic divestment or abandonment. Hydrocarbon processing operators developed and successfully use this action plan. E&C contractors need to do the same.

Intellectual capital must be better managed. Senior E&C contractor managements need to boost the productivity of all four crucial resources. Each key resource must be managed separately, and all resources must increase their productivity. A key resource for E&C contractors is intellectual capital, which also requires better management. This comprises proprietary knowledge and, more importantly, professionals or subject matter experts (SMEs). Manual or low-skilled workers can be substituted with capital investments in automation. However, no such substitution is possible for engineers and SMEs within the E&C industry (FIG. 1). Professional and knowledge workers must be properly supported to enhance motivation and productivity. This is a key task for senior management, but it is often overlooked.

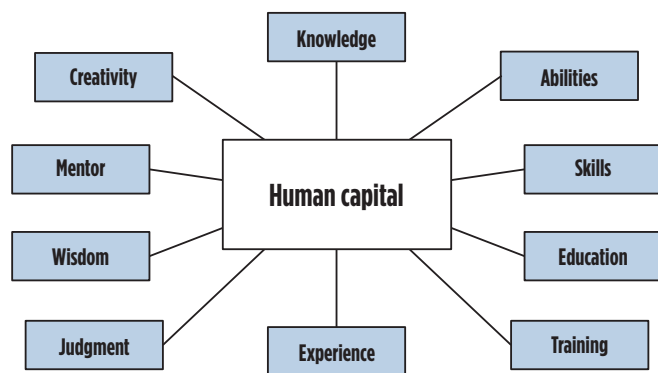


FIG. 1. Preserving human capital is critical for the survival of E&C companies.



"WILSON, WHAT EXACTLY IS A KNOWLEDGE WORKER AND DO WE HAVE ANY ON THE STAFF?"

FIG. 2. Senior management often does not use knowledge workers to their fullest potential.¹

Knowledge is capital and power. The modern E&C industry is increasingly populated by knowledge professionals. They are specialists and self-motivated; more importantly, they do not respond well to authoritarian-style management. Such professionals are experts in specialties including digitalization, shale exploitation, marketing, logistics, modular construction, etc. Knowledge professionals are vital; they provide senior management with critical information to support good decision-making. To keep knowledge workers highly productive, they must be treated as colleagues and given authority commensurate with their responsibilities. Senior management should treat knowledge professionals as peers. Unfortunately, this is not the normal case, and change is needed (FIG. 2).

In addition, senior management must assign professionals and knowledge workers to the right tasks to gain high productivity. The assignment must fit the skills and experience of the knowledge professional. The wrong assignment simply guarantees non-performance and poor productivity. Top management must put knowledge workers where they can be the most productive.

Time is money. The fourth key resource is time, which is especially significant during transformative periods. Top managements must balance the short run against the long run—the present against the future. It makes no sense to purchase higher profits today by making decisions that endanger the future health of the enterprise. The present and future must be satisfied by balanced decision-making.

The time dimension is even more important today. In the 1970s, a new industrial plant was expected to pay for itself within 3 yr. With current capital investment in developed countries, labor costs are 25 times greater than in the 1970s. Present-day return-on-investment (ROI) for capital projects can exceed 10 yr. Good and right decisions are critical. One reason for the popularity of shale development is the quick ROI, which averages 3 yr. In comparison, an offshore deepwater project may require 10 yr for full ROI.

Solutions to survive turbulent times. The future is unknown, and it will be different than the past. Therefore, top management must aggressively manage the time dimension and other resources. E&C companies need to rethink their goals and strategies to return to prosperity. At present, too many E&C companies are failing. Better management of the four key factors—capital, physical assets, knowledge and time—will greatly help E&C contractors. **HP**

LITERATURE CITED

- ¹ Brennan, J., "Measuring productivity for a change," June 27, 2017, online: <http://blog.jamjou.com/2017/06/27/measuring-productivity-for-a-change/>

J. P. CHEVRIERRE spent most of his career working in the international energy arena. He held executive positions at ARCO and Honeywell UOP. He has also authored many technical articles in all major hydrocarbon publications and journals, and is a frequent speaker on diverse management and engineering subjects. He holds a BS degree in engineering science with honors from Temple University, an MS degree from the Massachusetts Institute of Technology and a PhD from the Université de Paris. He is a member of numerous professional organizations, including the American Institute of Chemical Engineers and the Houston Philosophical Society.

ANABEL DAILY is President and CEO of Daily Thermetrics, a Houston-based heat management manufacturing company serving the hydrocarbon and aerospace industries. Dr. Daily holds a doctorate in medicine and an MBA from Rice University.